*TM 8–291

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OCCUPATIONAL THERAPY

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CHAPTER 1

GENERAL

1. Purpose and Scope

a. This manual outlines the principles of occupational therapy in an Army hospital. It is to be used as a guide for on-the-job training of enlisted occupational therapy specialists, military occupational specialty (MOS) 923, and as a reference for occupational therapists. The scope includes instructional material relating to the concepts, techniques, and skills in the practice of occupational therapy.

b. The material presented herein is applicable without modification to both nuclear and nonnuclear warfare.

c. Users of this manual are encouraged to submit recommended changes or comments to improve this manual. Comments should be keyed to the specific page, paragraph, and line of the text in which the change is recommended. Reasons should be provided for each comment to insure understanding and complete evaluation. Comments should be forwarded direct to The Surgeon General, ATTN: MEDPT–TD, Department of the Army, Washington 25, D.C.

2. Occupational Therapy

a. Objective. The objective of occupational therapy is maximum restoration of mental or physical health through utilization of activities.

b. Functions. To meet this objective, the occupational therapist plans and supervises the program to accomplish one or more of the following:

(1) Promote physical restoration and rehabilitation in neuromuscular and musculoskeletal conditions;
(2) Provide an atmosphere conducive to recovery through activities and the relationships developed around individual and group activities;
(3) Provide physiological supportive activities;
(4) Construct assistive and supportive devices;
(5) Provide training for amputees and other specialized disability groups; and
(6) A work therapy program.

3. References

References appropriate to specific subject matter are incorporated in the text. Appendix I contains a list of allied text references.

CHAPTER 2

ORGANIZATION

4. Physical Medicine Service

a. General. As a special field of medicine, the physical medicine service employs physical means in the diagnosis and treatment of neuromuscular and musculoskeletal diseases and injuries.

b. Organization. A physical medicine service may be established when a qualified physiatrist (MOS 3180) is assigned. The service is composed of three sections: consultation and diagnostic; physical therapy; and occupational therapy. Figure 1 illustrates organization where a physical medicine service has been established. See AR 40–22 and TM 8–295 for further information concerning the physical medicine service.

5. Occupational Therapy Section

a. Organization. Occupational therapy may be established in class II hospitals which are under the command of The Surgeon General, in class I hospitals which are under the commanding general of a zone of interior army, in oversea hospitals where occupational therapy personnel are authorized and assigned, and in table of organization and equipment (TOE) hospitals where authorized.

b. Medical Supervision. The occupational therapy section is under the medical direction of a physician. If a physical medicine service is not established, the occupational therapy section is under the direction of the professional service designated by the commanding officer, for example, the chief, orthopedic service of the department of surgery as depicted in figure 2.

c. Subsections. In large hospitals the occupational therapy section may be divided into subsections for effective operation. Each subsection is supervised by an occupational therapist who is responsible to the chief occupational therapist. The number and type of subsections may vary according to the physical plan of the installation.

6. Personnel and Functions

Figure 3 depicts a type of staff organization of an occupational therapy section. Detailed information concerning duties, specific

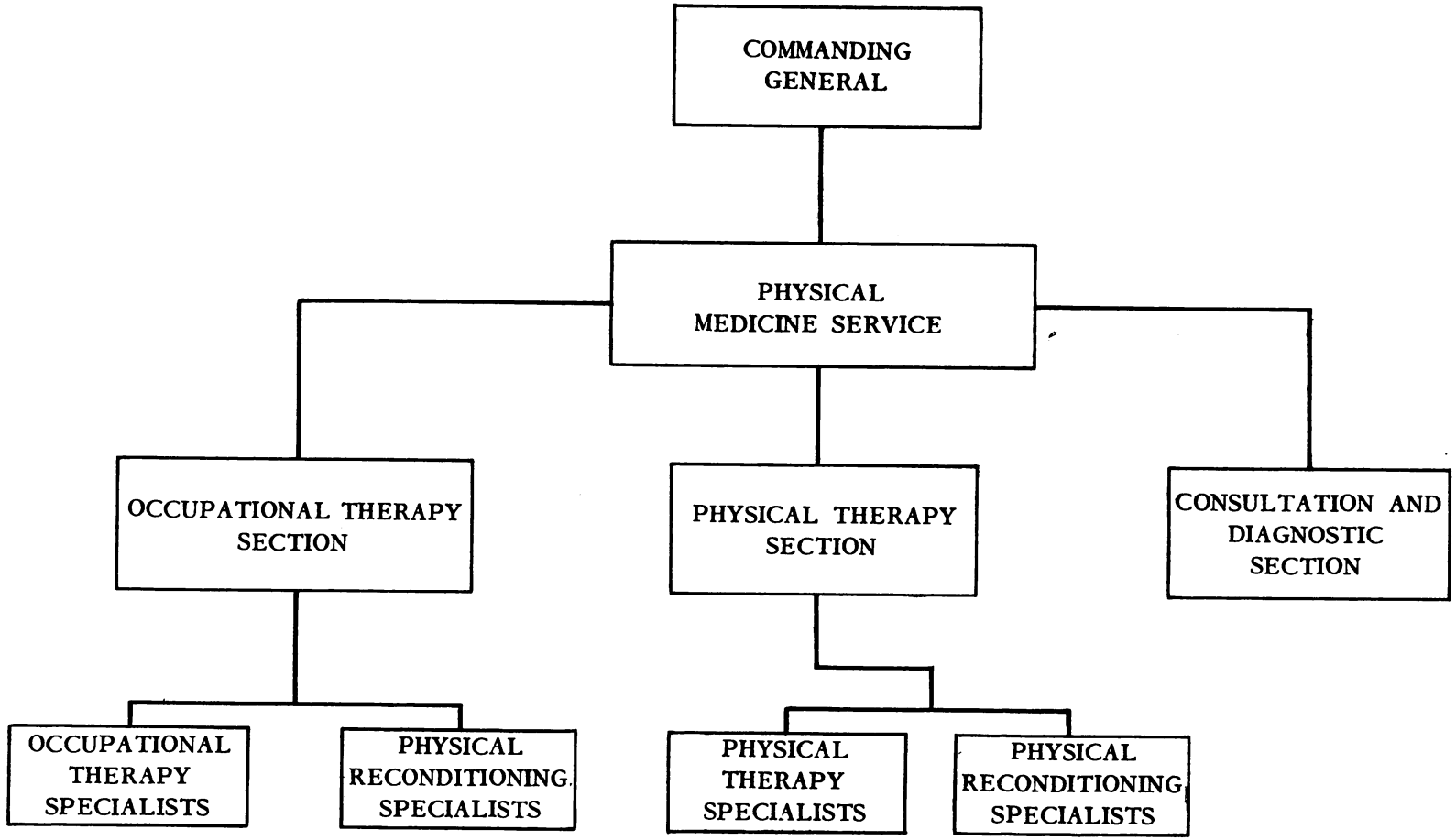


Figure 1. Organization of the physical medicine service.

skills, and knowledges required for officer personnel is contained in AR 611–101, and for enlisted personnel in AR 611–201.

a. Physiatrist (MOS 3180). This medical officer directs the program of the physical medicine service and is a consultant to other services.

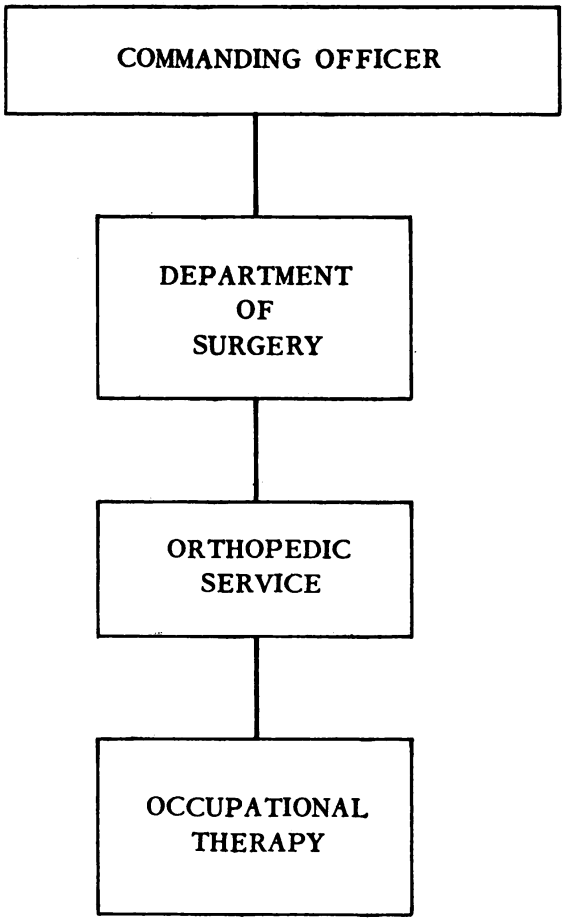
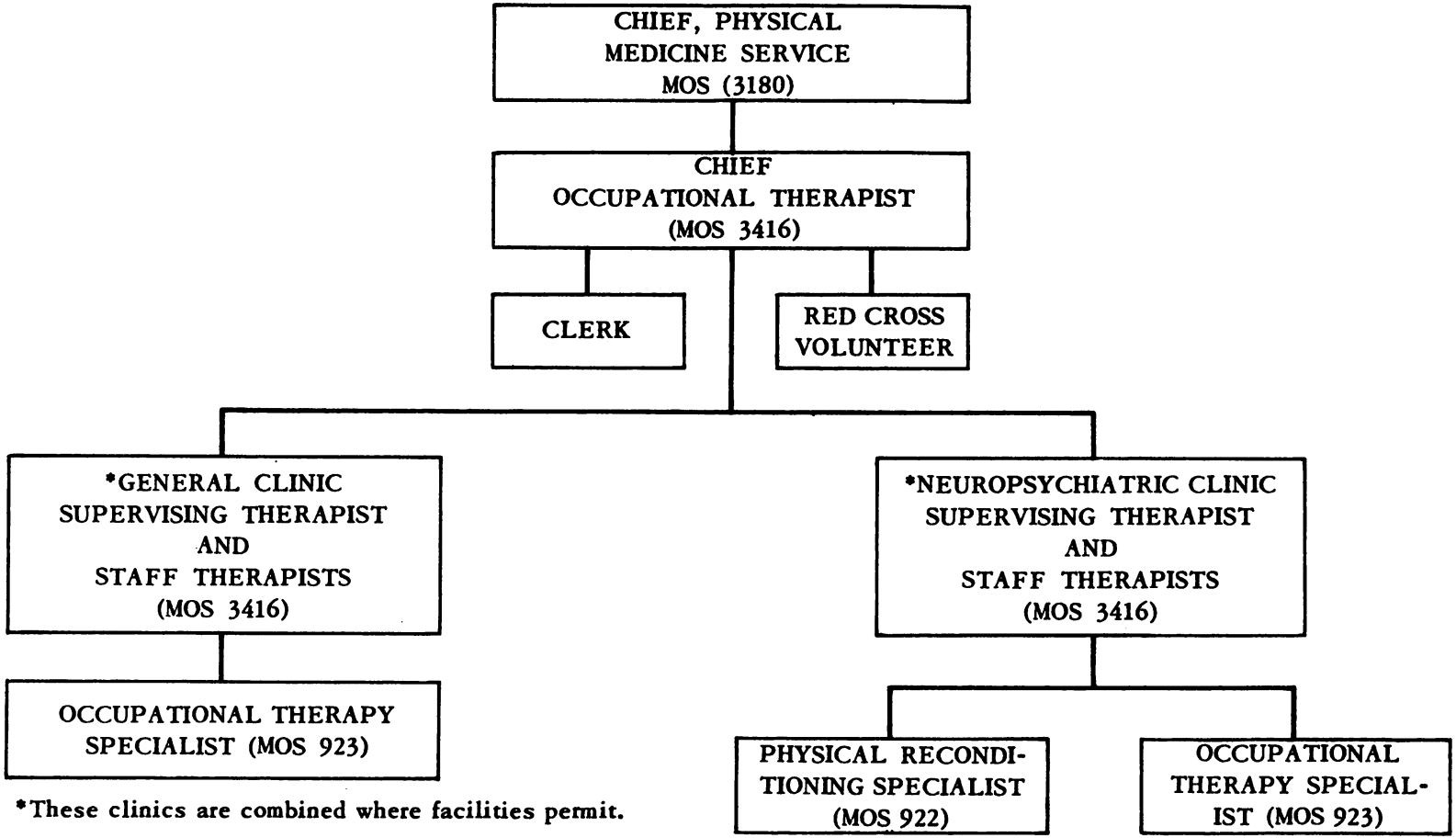


Figure 2. A form of organization: occupational therapy under department of surgery.

b. Occupational Therapist (MOS 3416). This officer supervises and conducts the occupational therapy program under the direction of a medical officer. The objectives and functions of occupational therapy are described in paragraph 2.

c. Occupational Therapy Specialist (MOS 923). This enlisted specialist assists the occupational therapist in the treatment of patients through the use of therapeutic activities such as woodworking, printing and through application of his knowledge of the principles and procedures of work therapy. The specialist



*These clinics are combined where facilities permit.

Figure 3. A type of staff organization of an occupational therapy section.

reports to the occupational therapist pertinent observations concerning patients. He enforces safety measures in all areas of occupational therapy. He assists in the requisitioning, storing and issuing of supplies.

d. Physical Reconditioning Specialist (MOS 922). This enlisted specialist when assigned to the occupational therapy section plans and conducts the physical reconditioning programs for the psychiatric patient and for the ambulatory tuberculosis patient. He organizes and instructs individuals and groups in games and competitive sports and conducts aquatic programs. He enforces safety measures in all programs.

CHAPTER 3

ASPECTS OF TREATMENT

Section I. PHASES OF TREATMENT

7. Patient Information

a. Referral. The referral of patients for occupational therapy is made by the medical officer on Standard Form 513 (Clinical Record Consultation Sheet). This request may be made to the physical medicine service in hospitals where this service exists; or it is made directly to the occupational therapy section in Army hospitals where the physical medicine service is not present. In psychiatric sections, the referral is forwarded direct to the occupational therapy section.

b. Prescription. The prescription is the direction of the medical officer to the occupational therapist for the desired treatment. These directions include the aims of treatment, contraindications, frequency of treatment, and other pertinent information. When there is no physiatrist within the hospital, the prescription is stated in the referral. In such cases it may be stated in more general terms, although it should include the same type of information. Subsequent changes to the prescription will be made by the physician as the patient's condition indicates.

c. Supplemental Information. Supplemental information may be gained from many sources which include the professional staff, clinical records, ward rounds, and through interviewing the patient.

8. The Initial Interview

a. The occupational therapist, in the initial interview, explains the purpose of occupational therapy to the patient in relation to his total treatment program. The patient becomes oriented to the occupational therapy clinic and aware of the expectations of him as a patient.

b. At this time subjective information from the patient may be of value to the therapist in planning the patient's occupational therapy program. Such information may include the patient's educational background, civilian employment, and his military duties.

c. Various tests may be given to determine the present state of the patient and to provide a basis for comparison in future evaluations.

Section II. PSYCHIATRIC CONDITIONS

9. General

a. Psychiatric disorders interfere with a person's capacity to participate in normal activity. Ability to achieve and sustain effective interpersonal relationships may be severely altered; extraordinary psychomotor activity may hinder appropriate responses to the environment; or inwardly imposed isolation may prevent satisfactory adjustments.

b. Factors inherent in the structure and functioning of the personality, as well as the life experiences of the individual, contribute to the development of psychiatric disorders. These factors, or predisposing and precipitating causes, are discussed in TM 8–243.

c. In treating mental illnesses, effort is directed toward changing abnormal behavior patterns by providing opportunities for successful solutions for psychological difficulties through emotional re-education.

10. Military Psychiatry

a. The specific objective of Army psychiatry is to reduce noneffective duty performance caused by psychological difficulties. This includes disciplinary problems as well as symptom disorders. Since most noneffective military behavior is the result of environmental and interpersonal relationship difficulties rather than individual psychopathology, the preventive aspects of psychiatry are emphasized.

b. Personnel in psychiatry are working with the military community to permit more realistic observation of the maladjustment process. This enables the psychiatrist to work more closely with the surgeon and utilize the milieu, or environment, as a therapeutic instrument. The development of this forward treatment concept emphasizes the significance of the military group in sustaining the individual soldier. Restoration of noneffective personnel enhanced through maintenance of identification with their group. Communication with and sustenance from the group provide the individual with vital support in tolerating stress.

11. Preventive Measures

The Army treatment program for psychiatric patients encompasses three major areas:

a. Primary prevention of psychological difficulties is effected through influence of the immediate environment of the soldier. The psychiatrist is a staff adviser to commanders and other supervisory personnel in the field. He renders professional assistance through early recognition of potential disciplinary and environmental problems, by conducting educational programs emphasizing mental health, and is responsible for the management of referred cases.

b. Secondary prevention is provided through early recognition and prompt management of emotional and behavioral problems on an outpatient basis, while the individual remains in his unit.

c. Implementation of these two preventive phases is effected through mental hygiene consultation services established at most Army posts within the United States. Smaller but similar outpatient psychiatric units are incorporated as integral parts of the medical services of all oversea divisions. The primary goal of this service is to restore or maintain military effectiveness, by utilizing a variety of military resources and extending treatment into the parent unit of the patient. The mental hygiene consultation service functions as the operational center from which personnel carry out their duties in the field. Referrals are received from unit commanders and dispensary medical officers. The referred soldier is interviewed in his own unit area. This service is also responsible for conducting group therapy programs, individual counseling, psychiatric evaluations, and stockade screening programs. TM 8–244 contains information on this service.

d. Tertiary prevention of chronically disabling disorders is accomplished through broad hospital rehabilitation programs at Army psychiatric treatment centers.

(1) *Types of patients.* Since the inception of mental hygiene consultation services, the number of open ward type patients, those with neuroses, has decreased markedly. These patients generally have rejected treatment and failed to demonstrate sufficient improvement to be returned to duty. Closed ward patients, those with psychoses, constitute the major mental health problem in the military hospital.

(2) *Clinical procedures.* The use of chemotherapy has markedly influenced patient management. Improvement or recovery has been faster. The patient has better control of his behavior, is more receptive to therapeutic guidance, and relates to others more easily. TM 8–243 describes other procedures utilized in Army psychiatric

treatment centers, including electrocoma and insulin therapies, sodium amytal interview, psychotherapy, and utilization of the milieu.

12. Occupational Therapy for Psychiatric Patients

Occupational therapy offers activities in an environment through which the patient may achieve more successful relationships with individuals and groups (fig. 4).

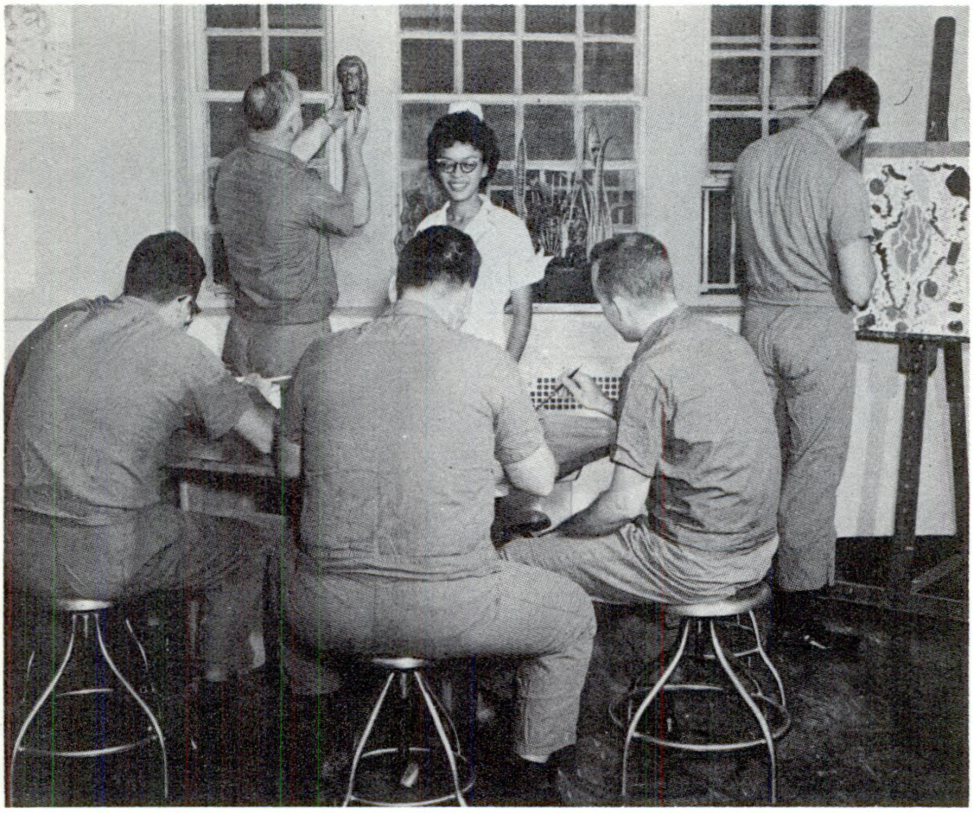


Figure 4. Group clinic activity.

a. Treatment. Treatment is directed toward definite goals through activity which will provide the opportunity for—

(1) Verbal and nonverbal expression.
(2) Understanding of patient's message.
(3) Evaluation of ability to function.
(4) Self assessment.
(5) Group recognition and expression.
(6) Ego support when indicated.

b. Activities.

(1) *General.* Manual activities are an important phase of the occupational therapy program for psychiatric pa-

Figure 5. Patient and therapist discuss work therapy assignment with supervisor.

tients. Within each clinic there are opportunities for self-expression through creative activities such as woodworking, printing, jewelry making, metal work, weaving, leathercraft or painting. An activity, in itself, does not constitute occupational therapy, but serves as a basis for the development of the therapeutic interpersonal relationship.

(2) *Work therapy.* This program provides therapeutic assignments in the hospital for selected psychiatric patients. Selection, placement, supervision, and performance evaluation of these patients is a coordinated responsibility of the psychiatrist and the occupational therapist. See paragraphs 44 and 45.

(3) *Physical reconditioning.* Physical reconditioning specialists, assigned to the occupational therapy section, conduct planned sports and exercise programs for psychiatric patients. Through these the patient is assisted in recovering his confidence and abilities in group relationships, and in developing physical skills (figs. 6 and 7).

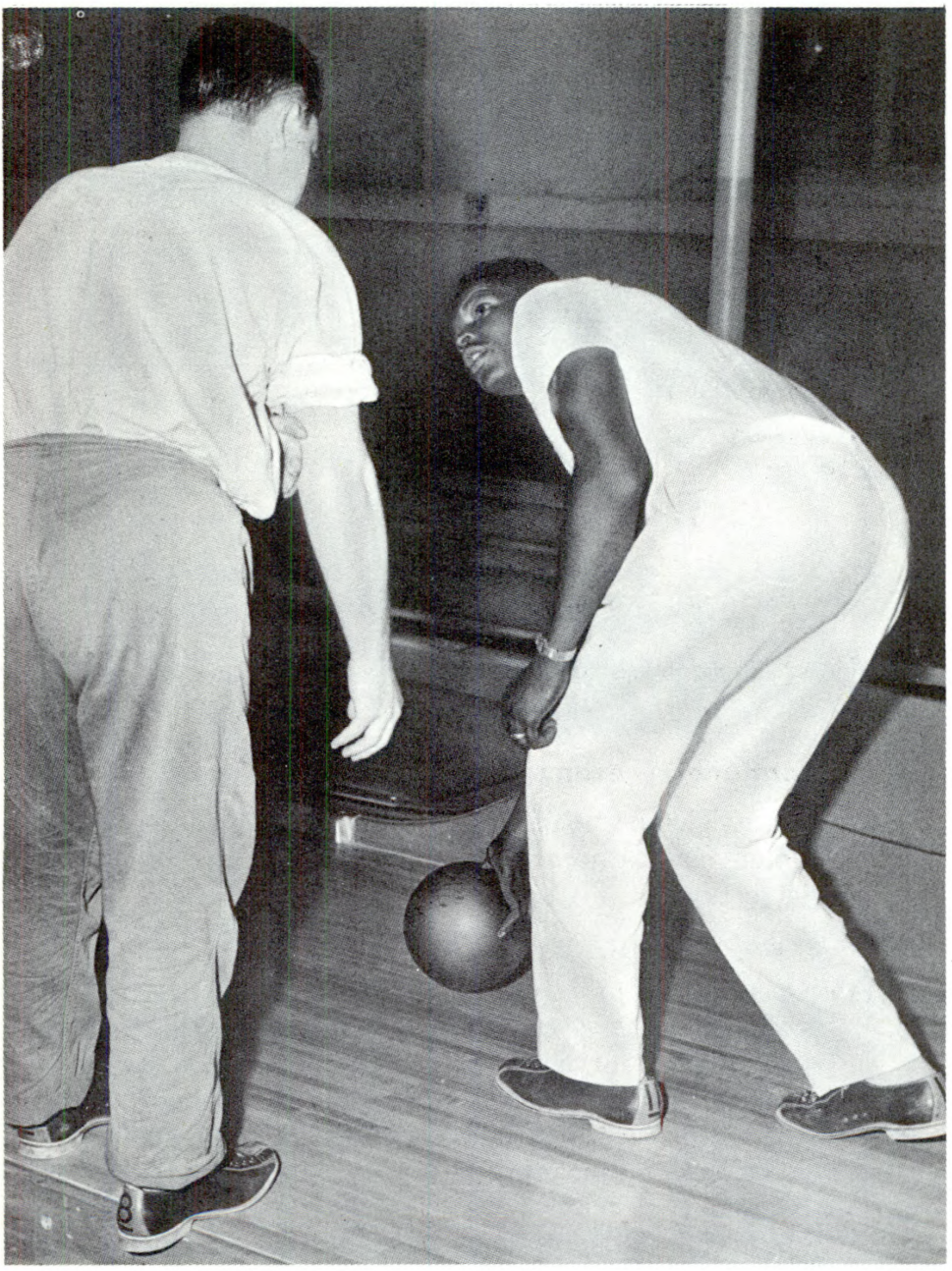


Figure 6. Physical reconditioning specialist demonstrates bowling technique.

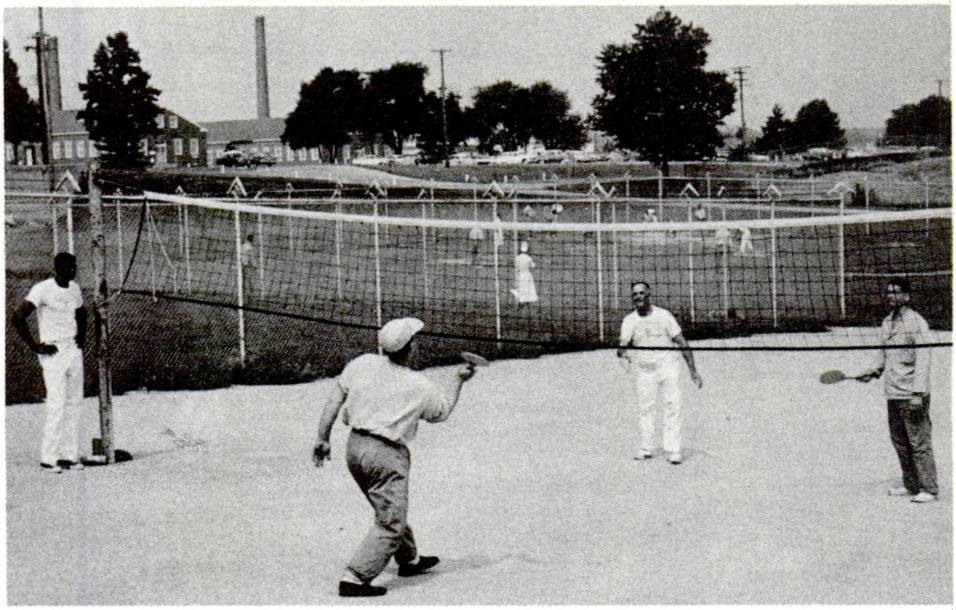


Figure 7. Physical reconditioning activities provide opportunities for group interaction.

13. Occupational Therapy Personnel in Psychiatric Sections

a. General. The occupational therapy personnel assigned to this subsection maintain close liaison to all other services in the psychiatric section.

b. Contributions.

(1) *Observation of the patient engaged in activity, or responding to those around him.* The occupational therapy personnel observe and report to the psychiatrist significant data which the patient may communicate concerning his desires, attitudes, content of hallucinations and delusions, the meaning an activity has for him, his ability to accept achievement or failure, his work habits, or his social skills.

(2) *Promotion of a therapeutic relationship.* A therapeutic relationship may be promoted through—

(*a*) Acceptance of the patient as a person without accepting his symptomatic behavior.

(*b*) Relating to the patient as a person who has a responsibility to recover from illness.

(*c*) Therapeutic use of verbal communication.

(*d*) Confronting the patient with his problems and troublesome behavior.

(*e*) Developing in the patient an awareness of the feelings of other group members.

(*f*) Recognition of one's own defensive actions and controlling them so that the therapeutic situation is maintained.

(3) *Establishment of a therapeutic environment.* This is accomplished through use of—

(*a*) Effective communication.

(*b*) Realism of activities.

(*c*) Pointing out acceptable means for expressing hostility and aggression.

(*d*) Stating limits and reasons to the patient whenever his behavior is unacceptable.

(*e*) Striving to fulfill dependency needs where gratification has been prescribed.

(*f*) Verbally recognizing the patient's confusion and supporting him in endeavors he can accomplish.

(*g*) Acknowledging psychomotor retardation and structuring activity commensurate with capability.

14. Therapeutic Communication

a. The psychiatrist has the responsibility for medical direction of the patient's occupational therapy program. He furnishes clinical information and guidelines; he indicates the plans and goals for his patient; he designates the general or specific contribution of occupational therapy to a particular patient's total treatment; and he recommends structural limitations in the environment, or stipulates areas to be observed.

b. The occupational therapist's report to the psychiatrist includes the significant verbal and nonverbal interactions of the patient with occupational therapy personnel and with members of his group. The therapist should strive to understand the "feeling" which the patient is trying to convey, rather than attempt to interpret patient conversations and behavior. Interpretation is the responsibility of the psychiatrist. Reports on patient's progress in reality testing situations, such as work therapy, should include not only comments on his emotional reactions, but also evidences of success in meeting the physical and social demands of the job.

c. The exchange of pertinent information including referrals

and progress notes, is vital to the success of the program. Information may be written, verbal, or both, in accordance with the exigencies of the local situation. Intake conferences, ward rounds, problem clinics, or informal discussions are excellent media for communication between members of the psychiatric team. This type of interchange is particularly valuable as an adjunct to the psychiatrist's written referral or a therapist's progress notes.

Section III. ORTHOPEDIC AND NEUROLOGIC CONDITIONS

15. Introduction

a. While orthopedic and neurologic conditions include many specific diseases and types of injuries, there are certain general features which may be common to all. Hence an outline of these features may serve as a basis for the evaluation of many individual conditions, and this evaluation, in turn, will be the basis for selection of the appropriate treatment.

b. Orthopedic and neurologic conditions will therefore be considered as a group with regard to principles of evaluation and treatment, with amputations being the exception. Amputations will be discussed separately because of the features peculiar to this condition, particularly prostheses and prosthetic training.

16. Evaluation

a. The referral and/or prescription should include a brief statement of the pertinent features of the case, the diagnosis or impression, the aims of treatment, and the precautions, if any.

b. The clinical records may be reviewed for necessary supplemental information.

c. Evaluation of the patient's motor, sensory, and joint range of motion status as well as his overall physical state and performance is necessary in order to institute rational treatment. Tables I and II are offered as guides to such evaluation.

d. Tests and measurements as referred to in Tables I and II—

(1) Results are recorded on standard forms or on a checklist. These data help to determine the degree of disability and to establish a baseline for comparison with future results.

(*a*) When the test is not within the province of the occupational therapist, test results are obtained from the patient's chart and other records, or from the referring physician, physical therapist, social worker, psychologist, or speech therapist.

(*b*) Manual muscle tests are recorded on Standard Forms 527 (Clinical record—manual muscle evaluation), 528

(Clinical record—muscle and/or nerve evaluation—manual and electric; upper extremity) and 529 (Clinical record—muscle and/or nerve evaluation—manual and electric; trunk, lower extremity, face). A key printed on each of these forms describes the performance in relation to the test grade (number or symbol). The test grade indicates whether passive, assistive, active, or resistive motion can be used in treatment.

(2) The *hand dynamometer* measures the force of grip in pounds. Grip of the dominant hand is usually 10 to 30 pounds greater than that of the subdominant hand. The patient should use the same dynamometer, since instruments differ in ease of operation. The test should be performed in the same manner. In unilateral involvement, the grip force of the involved hand is compared with the uninvolved. Where there is bilateral involvement, the average strength and general firmness of the unaffected muscles are used for comparative purposes.

(3) The *pinch gauge* measures lateral pinch force in pounds. The same criteria are used for comparisons as in the hand dynamometer test.

(4) Comparisons are made of prominent bony landmarks, muscle bulk and contour, and skin texture of the affected and unaffected parts. Tape measurements of the girth at comparable levels of the affected and unaffected extremities are indicators of differences in muscle bulk (atrophy or hypertrophy).

(5) *Joint range of motion* is measured in degrees with a *goniometer* and recorded on Standard Form 527a (Clinical record—joint motion measurement). Motions of the joints are described and illustrated in TM 8–295. Procedures for measurement are described in TM 8–640.

(6) Electrical tests—

(*a*) *Reaction of Degeneration (RD)* is usually performed by the physical therapist and may be recorded on Standard Forms 528 and 529.

(*b*) *Electrodiagnostic Test (EDX)* is usually performed by the physical therapist and recorded on a special test form.

(*c*) *Electromyography (EMG)* and *Nerve Conduction Velocity* studies are usually done by the psychiatrist and recorded in the patient's chart.

Table I. Motor, Sensory and Joint Ranges of Motion Evaluation

Condition	Cause	Characteristics	Tests	Occupational therapy	
				Aims	Methods
I. *MOTOR DISTURBANCE* A. *Weakness* 1. Lower Motor Neuron.	Lesions of ant. horn cell or its axon, in brain stem, spinal cord, spinal nerve root, plexus, or peripheral nerve. E.g.: Trauma (PNI). Direct. Secondary to fracture or dislocation. Inflammation. Polio. Guillain-Barre. Neuritis. Degenerative conditions. Progressive. Muscular Atrophy.	Flaccid paresis or paralysis. Muscle Atrophy. Diminished or absent deep tendon reflexes. No pathologic reflexes.	Voluntary Muscle Tests (SF 527, 528, 529). Dynamometer. Pinch gauge. Girth (tape) measurements (compare affected with unaffected part). Electrical tests. Reaction of degeneration (R.D.) Electrodiagnostic test (EDX). Electromyography (EMG). Nerve condition velocity.	Maintain or increase muscle strength, bulk, and coordination.	Muscle re-education and strengthening exercises. Cross education.
2. Upper Motor Neuron.	Lesions of brain, brain stem, or spinal cord.	Spastic paresis or paralysis.	Those listed above in I.A.I. may be used.	Muscle relaxation. Improve strength,	Coordination exercises.

	E.g.: Birth injuries. Hemorrhage (CVA). Inflammation (Encephalitis). Neoplasms. Trauma. Degenerative conditions.	Little or no muscle atrophy. Hyperactive deep tendon reflexes. Decreased or absent superficial reflexes. Pathologic reflexes and signs (e.g., Babinski sign).	Group or functional muscle testing is more informative than individual muscle testing.	control, and function. Initiate, facilitate, or inhibit motion.	Muscle re-education. Strengthening exercises. Facilitative or inhibitory exercises (use of stretch reflex).
B. *Incoordination*	Injury or disease of CNS—brain, brain stem, cerebellum, spinal cord.	Inability to produce smooth, rhythmic motion. Extraneous movements.	For speed, range, smoothness, direction, force, and constancy of rhythm: Gait. Finger to nose. Finger to finger. Heel to shin. Rapid flex and ext of fingers. Rapid tapping of table with extended fingers. Rapid supination and pronation of forearms. Rebound phenomenon. Minn. Rate of Manip. Test.	Improve control. Eliminate extraneous movement. Initiate, facilitate, or inhibit motion.	Coordination exercises. Muscle re-education.

Table I. Motor, Sensory, and Joint Ranges of Motion Evaluation—Continued

Condition	Cause	Characteristics	Tests	Occupational therapy	
				Aims	Methods
C. *Discontinuity of muscle or tendon.*	Injury or disease of muscle or tendon resulting in disruption of fibers and loss of continuity. E.g.: knife wound severing tendon or muscle belly.	Muscle belly proximal to site of involvement contracts but does not produce movement of part (at insertion).	Voluntary muscle test. Electrical stimulation of muscle. Electromyography. Electrodiagnostic test. Reaction of degeneration.	Improve muscle function if surgically repaired. Substitution of other muscle actions to produce desired motion.	Strengthening exercises. Teach substitution. Strengthen substitute muscles.
II. *SENSORY DISTURBANCE*					
A. *Cutaneous and deep sensibility.*	Disease or injury of CNS or PNS.	Pain, paresthesia. Hypesthesia, anesthesia. Temperature sensation disturbance. Impairment or loss of position sense, vibratory sense. Astereognosis.	Check response to pin prick, touch, hot and cold objects. Movement of fingers and toes up and down with eyes closed. Recognition of objects placed in hands with eyes closed. Sweat test.	Avoid increase in pain. Prevent injury to anesthetic part. Maintain or develop awareness.	Careful selection of activity. Conscious visual awareness of part during activity.
B. *Visual.*	Disease or injury of CNS or orbit.	Decreased visual acuity or blindness. Impaired depth perception.	Finger test. Number of images seen by patient. Visual field determi-	Increase acuteness of other senses. Teach compensation for poor depth	Activities to develop concentration, memory, touch, hearing.

		Double vision. Visual field defects.		perception and visual field defects.	Patch over one eye. Activities within visual fields.
C. *Auditory.*	Disease or injury of CNS or ear.	Decreased auditory acuity or deafness.	Conversation: stand behind patient and speak in a low voice.	Promote adjustment.	Speak directly in front of patient.
III. *LIMITATION OF JOINT MOTION.*					
A. *Complete—Ankylosis or Fusion.*	Injury or disease of joint. Surgical fusion.	No motion of joint may be joint deformity.	ROM Measurement. X-ray.	Compensate for lost motion.	Substitution. Assistive devices.
B. *Partial—Articular and Periarticular (Soft Tissue).*	Injury or disease of joint, muscle, tendon, nerve, or other soft tissue.	Diminished range of motion. Pain, swelling, deformity. Muscles or tendon contractures.	ROM Measurements (SF 527a). X-ray.	Maintain or increase ROM.	ROM exercises.

Table II. Elements of Physical Capacity Evaluation

Condition	Observations	Occupational therapy aims and procedures
I. *BODY MECHANICS*	Balance and coordination: head, trunk, and extremities—sitting and standing. Posture—sitting and standing. Gait.	Maintain proper or improve deficient balance, coordination, and posture. Teach compensatory movements for loss of balance. Support and position patient for good body alignment.
II. *HANDEDNESS*	Performance for dominance. Impairment or loss of dominant hand.	Improvement in skill of dominant hand where function impaired. Training of nondominant hand where dominant lost.
III. *MOTOR DEVELOPMENT*	Level of motor performance in relation to normal chronological motor development (particularly in children). Impairment or lack of motor skills for patient's age.	Stimulate development of new motor skills. Substitute patterns for deficient skills where applicable. Assistive devices where applicable.
IV. *PHYSICAL TOLERANCE*	Type, intensity, and duration of work. Speed and dexterity of performance.	Evaluate patient's work capacity. Improve patient's physical tolerance and work capacity: grade activity, increase work period, increase speed, improve body mechanics, increase vital capacity, teach motion economy, work therapy.
V. *APPLIANCES*	Type: splint, brace, cast, crutches, cane, corset, wheel chair, prosthesis. Fit, condition, and use of appliance.	Develop and maintain proficiency and safety in use of appliances. Instruct patient in and supervise use of appliance. Prosthetic checkout (upper extremity).

VI. *ACTIVITIES OF DAILY LIVING (ADL) or SELF-HELP*	Ability to perform daily self care activities, as feeding, bathing, dressing (Record deficiencies on ADL Evaluation Form). Home layout and activities.	Increase independence and performance. Assistive devices. Motion economy principles. Work therapy. Adapt home facilities to meet requirements of patient.

e. Precautions must be taken concerning conditions which might place a restriction on treatment procedures. Such conditions should be noted during the evaluation and include—

(1) Unhealed fractures and recently reduced dislocations, which must be protected.
(2) Circulatory disturbances with swelling necessitating elevation of the part, or with arterial insufficiency requiring avoidance of even minor trauma to the part.
(3) Anesthetic areas requiring protection from even minor injury.
(4) Recent surgical procedures which may impose restrictions.
(5) Underlying systemic disease which may impose limitations.

17. Treatment

a. All treatment should be well-supervised.
b. Procedures should incorporate the following, as appropriate:
(1) Desired motion.
(2) Adequate number of uninterrupted repetitions.

Figure 8. Effective treatment includes supervision.

(3) Gross to fine motions.
(4) Required assistance or resistance.
(5) Complete motion within existing range.
(6) Gradation of range of resistance.

c. The use of adaptations, assistive devices, and supports should be well-considered and employed only as medically indicated.

d. Unusual changes in the patient's condition should be reported to the referring medical officer.

e. When appropriate, the part being exercised should be uncovered in order that any substitutive or compensatory actions may be observed and corrected.

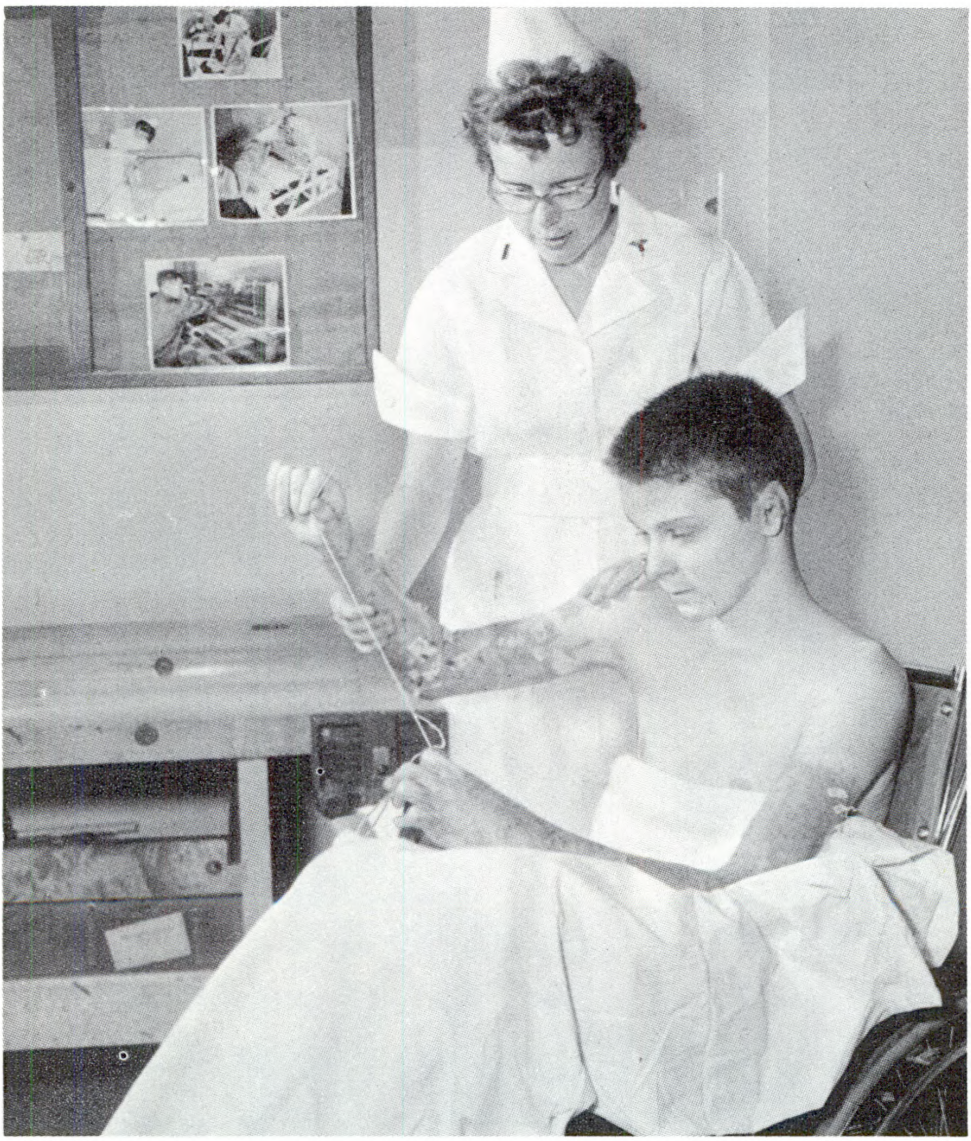


Figure 9. Maximum elbow extension is observed during leather lacing.

f. Periodic measurements may objectively demonstrate effectiveness of treatment procedures.

g. Treatment procedures should be reviewed frequently and revised, if appropriate, to insure continued improvement.

h. Lack of satisfactory progress may be the result of anatomical, physiological, or psychological blocks, the nature of the illness or injury, or inappropriate treatment procedures.

18. Reports

Progress of the patient, with results of re-evaluation and re-testing, should be reported to the referring physician as indicated.

19. Amputees

a. General.

(1) The program for the treatment of the patient who has suffered an amputation is complex. It must be predi-

Figure 10. Therapist encourages gross coordination.

cated on an analysis of the physical, mental, social, and vocational requirements of the patient. A team of professional personnel, usually comprised of a physician, occupational and physical therapist, and the prosthetist, plan and implement treatment procedures on an individual basis. Consultation with other specialized services may be required.

(2) The policy of the Army of grouping patients with like disabilities, such as amputees, at specialized treatment centers, provides an opportunity for the patient not yet fitted with his prosthesis to observe other patients who are becoming, or who are proficient in the use of their prosthesis.

b. The Prosthesis. The level of amputation determines to a large extent the amount of function of the partial extremity, and therefore also influences the amount of function which may be regained through the use of a prosthesis. The major elements of the design of the prosthesis are—

(1) The socket form which determines the purchase upon the site of amputation, or stump, as well as the fixation of the mechanical parts.

(2) The harness which utilizes substitute body movements for operation of the prosthesis.

c. Precautions.

(1) Avoid pressure or movement on a neuroma, since this may cause pain.

(2) Skin irritations and blisters can result from friction of the prothesis, cuff, and wrinkles in sock or socket material.

(3) Guard against development of postural defects.

(4) Attachments and/or prostheses which fit too tightly at top and bottom of stump may cause edema.

20. Activities of Daily Living (ADL)

a. General. Activities of Daily Living are those functions vital to the accomplishment of daily personal activities such as personal hygiene, dressing, feeding, ambulation, and communication. Charts, such as those shown in figures 12, 13, and 14, may be useful in compiling ADL checklists.

b. Performance Testing and Evaluation.

(1) Patient should perform each task.

(2) Performance should be evaluated for method as well as completion of the activity.

(3) Test results should be evaluated.
(4) Suggestions for improvement should be given.
(5) Assistive devices should be considered.

Section IV. GENERAL MEDICAL AND SURGICAL CONDITIONS

21. General

a. Diagnoses. Conditions included in the general medical and surgical category may involve the cardiovascular, respiratory, digestive, and other systems.

b. Occupational Therapy.

(1) *Evaluation.*

(*a*) The physical evaluation of patients with general medical and surgical conditions includes an assessment of muscle power, ROM, coordination, tolerance, and performance of ADL. See section III.

(*b*) Evaluation of the patient's psychological condition is also indicated. Anxiety, fear, frustration, depression, or worry may be deterrents to recovery. See section II.

Figure 11. Patient develops skill in using his prostheses.

(2) *Treatment considerations.*

(*a*) Specifically, the objectives of treatment are determined by the diagnosis and resulting disability, together with the emotional reaction of the patient.

(*b*) Patients with medical and surgical conditions also may need general assistance in—

1. Adjusting to immobilization or prolonged bed rest (fig. 15).

Upper extremity amputation – evaluation

Name	Age	Sex	Occupation
Type of Amputation	Type of Terminal Device		
Therapist	Date(s) of Test		

RATING GUIDE

0. Impossible
1. Accomplished with much strain or many awkward motions
2. Somewhat labored or few awkward motions
3. Smooth, minimal amount of delays and awkward motions

BASIC PERFORMANCE

	0	1	2	3		0	1	2	3
Put on stump socks					Take off prosthesis				
Put on prosthesis					Adjust Cineplasty pin				

BASIC MOTIONS OF OPERATION DRILL

	0	1	2	3		0	1	2	3
Lock Elbow at 90°					Close Terminal Device				
Open Terminal Device					Unlock Elbow (Flex Forearm to mouth)				
Close Terminal Device					Lock elbow at mouth				
Unlock Elbow (Lower Forearm to extension)					Open Terminal Device				
Lock Elbow in Extension					Close Terminal Device				
Open Terminal Device					Unlock Elbow (return to 90°)				

TERMINAL DEVICE DRILL

	0	1	2	3		0	1	2	3
Pick up wooden blocks					Pick up ice cream cone				
Pick up sponge blocks					Other				

TRAINING BOARD ITEMS

	0	1	2	3		0	1	2	3
Hammer and nail					Paper cup dispenser				
Padlock and key					Water faucet (round handle)				
Screen door latch					Water faucet (T-bar)				
Fountain pen					Window latch & lift				
Door chain latch					Pencil sharpener (table)				
Trunk lock (small)					Drawer pull (wood knob)				
Trunk lock (large)					Drawer pull (metal bar)				
Pencil sharpener (wall)					Drawer pull (cup handle)				
Jar and lid					Door pull (metal knob)				
Light switch (bracket type)					Door pull (spring latch)				
Light switch (toggle)					Door bolt				
Light switch (push button)					Wall bottle opener				
Light switch (rotary)					Hand bottle opener				
Electric wall plug (horizontal)					Pick up coins from table				
Electric wall plug (vertical)									

Figure 12.

Single upper extremity amputation – activities of daily living

Name	Age	Sex	Occupation
Type of Amputation	Type of Terminal Device		
Therapist	Date(s) of Test		

RATING GUIDE

0. Impossible
1. Accomplished with much strain or many awkward motions
2. Somewhat labored or few awkward motions
3. Smooth, minimal amount of delays and awkward motions

PERSONAL NEEDS:	0	1	2	3
Put on shirt				
Fasten buttons: cuff & front				
Put on belt				
Put on glove				
Put on coat				
Lace and tie shoes				
Tie a tie				
File finger nails				
Polish finger nails				
Set hair				
Clean glasses				
Squeeze toothpaste				
Put on bra and fasten				
Use zipper				
Hook garters				
Take bill from wallet				
Light a match				
Open pack of cigarettes				
EATING PROCEDURES:				
Carry a tray				
Butter bread				
Cut meat				
DESK PROCEDURES:				
Use dial telephone				
Use phone and take notes				
Use pay phone				
Sharpen pencil				
Use ruler				
Use scissors				
Remove & replace ink cap				
Fill fountain pen				
Fold and seal letter				
Use card file				
Use paper clip				
Use stapler				
Wrap a package				
Type				
Write				
COMMENTS:				

GENERAL PROCEDURES:	0	1	2	3
Use Key in lock				
Open and close window				
Play cards & shuffle				
Wind a clock				
Assemble wall plug				
HOUSEKEEPING PROCEDURES:				
Wash dishes				
Dry dishes				
Polish silverware				
Peel vegetables				
Cut vegetables				
Open a can				
Manipulate hot pots				
Sweeping				
Use dust pan				
Use vacuum cleaner				
Use wet mop				
Use dry mop				
Set up iron board				
Iron				
Wash and wring out laundry				
Hang up & take down laundry				
Thread needle				
Sew on button				
USE OF TOOLS:				
Layout				
Saw				
Plane				
Sand				
Drive screws				
Hammer				
File				
Drill				
Power tools				
Gravel pit				
CAR PROCEDURES:				
Change tire				
Use jack				

Figure 13.

2. Preventing overexertion.
3. Achieving relaxation.
4. Performing activities of daily living.

(c) The therapist also assists in determining the patient's potential for return to duty or employment by providing work situations for testing mental or physical capacities.

Bilateral upper extremity amputation – activities of daily living

Name	Age	Sex	Occupation
Type of Amputation	Type of Terminal Device		
Therapist	Date(s) of Test		

RATING GUIDE

0. Impossible
1. Accomplished with much strain or many awkward motions
2. Somewhat labored or few awkward motions
3. Smooth, minimal amount of delays and awkward motions

PERSONAL NEEDS:	0	1	2	3	EATING PROCEDURES:	0	1	2	3
Buttoning					Pulling chair from table				
Zippers					Use napkin				
Hooks					Pick up utensils				
Snaps					Drink from glass				
Lacing					Drink from cup				
Tie shoe laces					Eat with a spoon				
Put on socks					Eat with fork				
Put on shoes					Cut meat				
Shorts					Eat soup				
Shirt					Eat sandwich				
Trousers					Eat potato chips				
Tuck shirt in trousers					Butter bread				
Tie necktie					Pass dishes				
Put on belt with buckle					Use salt shaker				
Blow nose					Drink from bottle				
Clean glasses					Pour liquid from pitcher				
Put on watch					Eat ice cream cone				
Wind watch					DESK PROCEDURES:				
Put on topcoat									
Put on hat					Use dial telephone				
Put on overshoes					Use phone and take notes				
Use umbrella					Use pay phone				
Shave					Sharpen pencil				
Shower Lavatory procedures					Use eraser				
Lavatory procedures					Use ruler				
Brush and comb hair					Use scissors				
Set hair					Remove and replace ink cap				
Apply cosmetics					Fill fountain pen				
Squeezing toothpaste					Fold and place in envelope				
Brushing teeth					Open sealed letter				
Put on bra and fasten					Use card file				
Hook garters					Use paper clip				
Hook suspenders					Use stapler				
					Wrap package				
					Unwrap package				
					Turn pages				
					Type				
					Write				

Figure 14.

22. Tuberculosis

a. General. The use of chemotherapy for patients with tuberculosis has markedly changed the treatment program. In general, the amount of activity is increased and the length of hospitalization is decreased.

b. Program.

(1) Anti-TB drugs (chemotherapy) combined with physical activity have brought decided changes in the treatment of patients with tuberculosis. Greater emphasis is now placed on early ambulation with higher levels of activity. The amount of activity permitted the patient is indicated in table III.

Cont.

GENERAL PROCEDURES:	0	1	2	3	HOUSEKEEPING PROCEDURES:	0	1	2	3
Take money from purse					Place dishes on tray				
Take money from trousers					Carry tray				
Pick up change					Pick up objects from floor				
Ring door bell					Operate water faucet				
Use key in lock					Wash dishes				
Turn on lights					Dry dishes				
Use door knobs					Put dishes on shelf				
Turn on faucet					Polish silverware				
Open & close window					Peel vegetables				
Open & close drawers					Cut vegetables				
Use radio & television					Open can				
Play cards					Use egg beater				
Play checkers					Open egg				
Light a match					Mix with spoon				
Light a lighter & smoke					Store in refrigerator				
Wind a clock					Light a stove				
Open & close safety pin					Cook on top of stove				
Open a coke bottle					Cook in oven				
Hook screen door					Manipulate hot pots				
Operate window blind					Sweeping				
Use camera					Use dust pan				
Change record					Dust				
Carry suitcase					Use vacuum cleaner				
USE OF TOOLS:					Use scrub brush on floor				
					Use wet mop				
Layout					Use dry mop				
Saw					Use plug in baseboard				
Plane					Plug in iron				
Drive screws					Set up iron board				
Hammer					Sprinkle clothes				
File					Iron				
Drill					Sort laundry				
Sand					Wash and wring out laundry				
Gravel pit					Hang up & take down laundry				
Power tools					Thread needle				
CAR PROCEDURES:					Sew on button				
					Use pins				
Drive									
Raise hood									
Use jack									
Change tire									

Figure 14.—Continued.

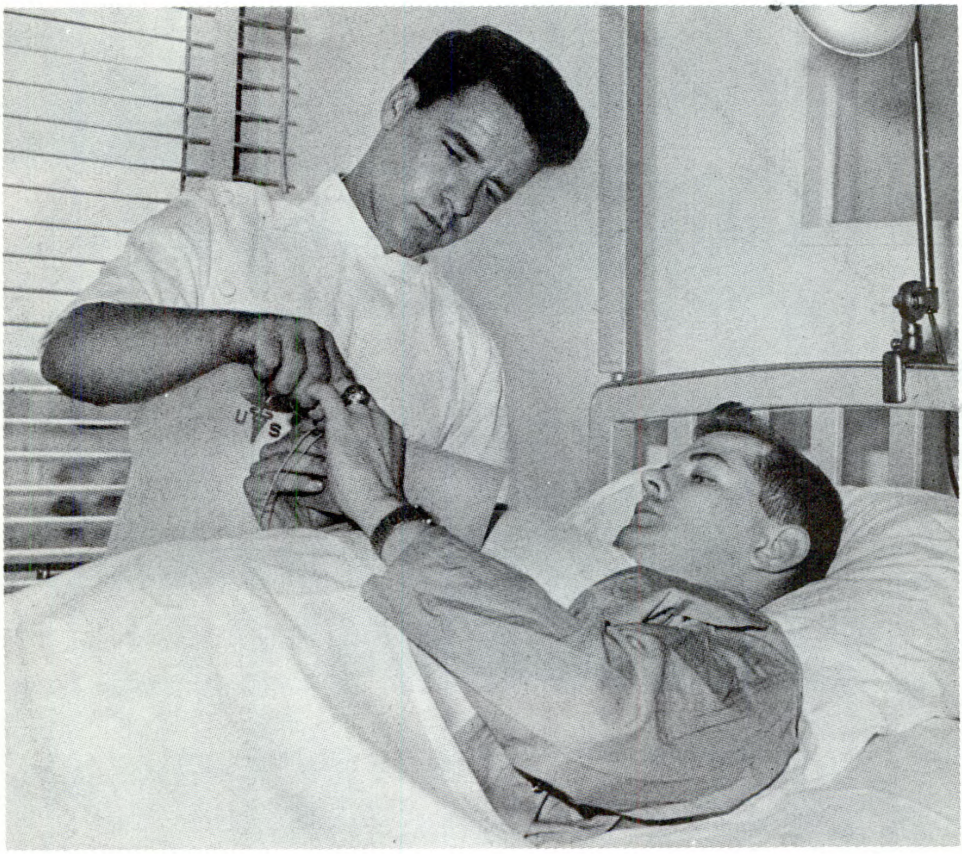


Figure 15. Occupational therapy specialist assists the patient.

Table III. Pulmonary Tuberculosis Rehabilitation Program **

(Treatment and rehabilitation (patient classification) is based on clinical findings and diagnosis.)

Clinical findings and diagnosis				Treatment and rehabilitation	
Active symptoms	Positive sputum	Chest X-ray: changing or cavitary lesion	Diagnosis of Disease*	Treatment Class	Rehabilitation program
Present.....	Positive.....	Present.....	Active.....	I.....	Bed rest: For patients with active symptoms and new admissions. Isolation technique required. Chemotherapy.
Slt. or None..	Pos or Neg..	Present.....	Active.....	IIa.....	Ambulatory: Exercise restricted because of type of disease, age, or complications. Educational programs initiated; occupational therapy with no time restriction.
None.....	Negative....	Stabilizing Lesion, Stable–1)	Active.....	IIb.....	Ambulatory: Physical rehabilitation initiated. Isolation technique continued.
		–2)	Active.....		
		–3)	Active.....		
		–4)	Arrested (neg. 3 mos)	III.....	Ambulatory: Civilian patients may be discharged from hospital; military patients assigned to work therapy program; permitted passes. No isolation required.
		–5)	.....do.....		
		–6)	.....do.....		
			Inactive (neg. 6 mos)	IV.....	Duty or full employment when the disease is inactive. Anti-TB drugs continued after discharge for at least 6 months (total approximates 18 months).

* Diagnosis: Active disease is characterized by a changing (unstable) lesion on chest X-ray, positive sputum and symptoms (class I & II patients). In arrested disease (class III patients) these findings are negative or absent 3 months; inactive disease 6 months (class IV patients).

** Modified from Fitzsimons General Hospital 1961.

(2) Activities such as occupational therapy and physical reconditioning are usually initiated early in the treatment of the tuberculosis patient. By the time the patient reaches the noncontagious stage, usually in 4 to 6 months, he is assigned to the work therapy program. When patients enter this phase of the treatment they are often permitted, if possible, to live at home. Work therapy may be continued for approximately 6 months during the hospitalization. The patient is returned directly to duty without extended leave, but continues drugs for an additional 6 months (fig. 16).

c. Classification.

(1) Patients with tuberculosis may be classified by treatment status, or pathologically, in accordance with the Diagnostic Standards of the National Tuberculosis Association. TB Med 236 explains these classifications.

(2) Table III illustrates a method of grouping patients by treatment status. This may be used as a guide, within the hospital, to reflect the status of the patient's disease, current treatment, and the rehabilitation program in effect.

d. Physical Reconditioning. Upon approval of the medical officer, the patient participates in the physical reconditioning program of planned exercises and athletics. Appropriate activities (table III) are conducted both on and off the wards by physical reconditioning specialists under the administrative supervision of the occupational therapist (fig. 17). Participation in this program continues until the patient is discharged.

Figure 16. Upholstering increases physical tolerance.

Figure 17. Physical reconditioning—a planned exercise and athletic program.

CHAPTER 4

ADJUNCTS TO TREATMENT

Section I. ADAPTATION OF EQUIPMENT

23. Self-Help Devices

Devices are designed to provide independence for the disabled person. Such assistance may enable him to perform activities of daily living, it may substitute for lost muscle power, or support weak segments. When a device is being considered for a patient, the occupational therapist may assist in the—

a. Evaluation of the patient's physical capabilities and need for a device as demonstrated by clinic performance.

b. Analysis of the motions and muscle strength required by the device.

c. Fabrication.

d. Instruction in the use of the device.

e. Recommendations for adjustments or alterations.

f. Evaluation of the patient's acceptance and use of the equipment.

24. Adaptation of Equipment

Since there are few adaptations commercially available for occupational therapy equipment, personnel may be concerned with adapting the available equipment. Effective adaptations—

a. Fulfill the specific requirement for which intended.

b. Retain the operational procedures basic to the equipment.

c. Utilize natural body mechanics.

d. Are easily operated and maintained.

e. Are durable and withstand the stress of use.

Note. The adaptation authorized by this paragraph does not permit a permanent modification of standard equipment since any permanent alteration requires a modification work order under the provisions of AR 750–5.

25. Development of Devices

Contributions made by the occupational therapist and specialist in the development of devices are contingent upon—

a. Knowledge of anatomy and kinesiology as related to performance.

b. Ability to analyze the patient's existing motions and those motions which are basic to the activity.

c. Analysis of patient requirements for an adaptation.

d. Knowledge of materials and methods of fabrication.

e. Ability to evaluate adequacy and proper fit of devices.

Section II. INSTRUCTION

26. Instruction of Patients

Occupational therapy utilizes many activities in treatment of patients. Effective instruction in these activities contributes greatly to therapeutic success.

27. Effective Instruction

a. Plan the activity to fulfill the treatment goal.

b. Motivate the patient through interest.

c. Prepare the materials, equipment, and working area prior to the instruction.

d. Explain the techniques in terms that are understood by the patient.

e. Demonstrate the activity. When the activity is complicated, divide the demonstration into logical steps. Stress the key part of each step as it is being demonstrated. Provide the patient an opportunity to practice the various steps.

f. Follow-up on the patient's performance. Correct errors as they occur, observe methods, and evaluate progress frequently.

g. FM 21–6 contains detailed information on techniques of military instruction which may be applied in occupational therapy.

Section III. PSYCHOLOGY OF THE PHYSICALLY DISABLED

28. Reactions and Adjustments

a. Professional medical personnel have considerable responsibility in helping a disabled person to live to the full extent of his physical capacities, yet within the limitations of his disability. To understand the patient as he works toward this goal, some insight in the patient's point of view may be helpful.

b. An individual who has a residual which threatens his social, economic, or emotional status, may find that many changes are forced upon him. The patient, if he successfully responds, must gain some acceptance of his physical limitations and the effects that these limitations may impose.

29. Assistance to the Patient

a. During this period the patient may exhibit immature or hostile reactions. In some instances individuals may become overly dependent, or may be resentful of their dependency upon their family or the hospital personnel.

b. Occupational therapy personnel can best assist the patient by encouraging him to participate in activities to become increasing independent, and in socializing activities.

Section IV. HOSPITAL ETHICS

30. General

Ethics, or moral principles, are those philosophies of conduct which influence behavior. Those which are professionally appropriate for specific groups are frequently developed into codes of ethics. The Hippocratic Oath is a classic example of ethical influences on professional medical conduct.

31. Elements of Ethics for Occupational Therapy Personnel

a. Occupational therapists and specialists assume responsibilities toward patients and associates and commit themselves to the upholding of professional standards.

b. Information of a confidential nature regarding patients is considered a trust.

c. Personnel should avoid all actions or statements which in any way could be construed by the patient as criticism of the physician. Disparaging remarks or implications concerning professional co-workers are to be avoided.

d. Specific statements concerning the patient's prognosis will be made only by the physician. Such statements by the therapist could prove detrimental to the welfare of the patient.

e. It is considered unprofessional for occupational therapy personnel to accept gratuities.

f. In addition to applying the techniques of the profession in the most efficient manner, all personnel should constantly strive for greater knowledge and proficiency.

g. In the interest of supporting and advancing the profession, the occupational therapists should be members of their professional organizations, local, state, and national, and cooperate in efforts to extend and improve occupational therapy.

h. The literature of a profession is indicative of its maturity

and is a manner of recording observations, concepts, and improved methods of treatment. Articles and other forms of publications are a part of the therapist's growth and professional maturity.

32. Interpersonal Relationships

a. Professional and Personal Attributes. To promote cooperative staff relationships, attention should be given to developing desirable personal characteristics. In one's daily work it is necessary to practice democratic leadership. Keep informed, fulfill the responsibilities, and check for satisfaction. One's position in the group is won only as deserved and as the confidence and respect of fellow workers is gained. In other words, one's authority comes from the group and the situation. At times, all personnel must be good followers, and effective leadership is not possible without this.

b. Physician-Therapist Relationships. Occupational therapists are a part of a team under the direction of a physician who is responsible for the patient. The occupational therapist administers treatment which is directed by the physician, and records, evaluates, and reports the patient's level of performance to the physician.

c. Co-worker Relationships. Whenever two or more people work together, differences of opinion occur since no two people have identical backgrounds or training. When analyzed, many differences concern trivial details. Commonsense, a spirit of fairness, and an appreciation of the Golden Rule will serve in most cases to keep harmony. Mutual respect, sensitivity to others, and discussion of the problem will contribute toward a happy atmosphere. Mutual helpfulness should be fostered.

d. Patient-Staff Relationships.

(1) Consider patients as individuals and human beings, not as "cases."

(2) The relationship should be warm, friendly, and yet objective.

(3) Recognize individual differences.

(4) Respect confidences.

(5) Be reassuring when treating apprehensive patients.

(6) Conversation should be tactful.

(7) Understand thoroughly the diagnosis, prescription, and treatment objectives and techniques.

(8) Explain to the patient the reason for the activity or treatment, insofar as possible, in order to gain his confidence and cooperation.

Section V. SUPPLY

33. Standard Items

a. Definition. Standard items of supply are those which have been officially adopted for procurement.

b. Identification.

(1) Every standard item within the supply system of the Federal Government is classified under the Federal supply classification (FSC). This includes all the standard items used by the Army, Navy, and Air Force, as well as other Federal agencies.

(2) Within the Federal supply classification items are arranged in approximately 75 general numbered groups. Within each group there is a further breakdown into classes of relatively homogeneous items.

(3) Each item in the Federal supply classification is identifiable by a Federal stock number (FSN). This stock number consists of 11 digits. The first two numbers identify the group to which the item belongs; the second two indicate the class within the group; and the remaining seven complete the identification. Thus, an item with the Federal stock number 6515–365–1200 belongs to Group 65, Medical, Dental, and Veterinary Equipment and Supplies, and specifically to Class 6515, Medical and Surgical Instruments, Equipment, and Supplies. It is further described and illustrated within its class in a DA Supply Manual, "Armed Services Medical Stock List."

Examples of Groups Pertinent to Occupational Therapy

GROUP—	32	Woodworking Machinery and Equipment
	34	Metalworking Machinery
	36	Special Industry Machinery
	40	Rope, Cable, Chain, and Fittings
	51	Hand Tools
	52	Measuring Tools
	53	Hardware and Abrasives
	55	Lumber, Millwork, Plywood, and Veneer
	65	Medical, Dental, and Veterinary Equipment and Supplies
	66	Instruments and Laboratory Equipment
	71	Furniture
	75	Office Supplies
	78	Recreational and Athletic Equipment
	80	Brushes, Paints, Sealers, and Adhesives
	83	Textiles, Leather, and Furs

Examples of Classes Within Group 65

GROUP 65—Medical, Dental, and Veterinary Equipment and Supplies

Class 6506 Drugs, Biologicals and Official Reagents
6510 Surgical Dressing Materials
6515 Medical and Surgical Instruments, Equipment and Supplies
6520 Dental Instruments, Equipment and Supplies
6525 X-ray Equipment and Supplies, Medical, Dental and Veterinary
6530 Hospital Furniture, Equipment, Utensils, and Supplies
6545 Medical Sets, Kits, and Outfits

c. Technical Responsibility.

(1) For logistical reponsibility, i.e., for procurement, storage, and distribution, each standardized item is assigned to a technical service, either transportation, medical, chemical, ordnance, signal, engineer, or quartermaster.

(2) DA supply manuals are published for each technical service. These provide the data for requisitioning, including Federal stock number, descriptive information, illustrations, use, unit of issue, and expendability status (par. 35).

d. Requisitioning. Through information contained in these supply manuals, the various units, or using agencies, within the hospital determine their requirements for a given period of time. Requests are submitted to the unit or installation medical supply officer where one of the following actions will take place:

(1) Item will be issued.

(2) Item will be "due out", i.e., the item has been requisitioned from the depot and will be issued at a later date.

(3) Item is canceled, because of lack of consumer funds, would not be available in a reasonable length of time, or is disapproved by the commanding officer.

(4) Item will be purchased locally, as authorized by the responsible technical service. This is not to be confused with local procurement of *nonstandard* items (par. 34).

34. Nonstandard Items

a. Source.

(1) An item not listed in the Federal supply classification system is defined as a nonstandard item. Since it is unavailable through normal supply channels, it must be purchased with local hospital funds.

(2) Many of the items necessary to occupational therapy operations fall within this category. Therefore, it is

necessary to have current information as to where items are available, as well as other data pertinent to purchase.

b. Requisitioning. When a nonstandard item is requested, detailed information on specifications, vendors, approximate cost, and a justification accompany the request in order to avoid error and aid the approving authority to evaluate the expenditure of funds.

35. Expendability

All items, standard and nonstandard, are classified either as expendable or nonexpendable.

a. Expendable Items. An expendable item is one that may be consumed in use, loses its identity through use, or the cost is such that record keeping is impractical. Leather, wood, and plastic are typical of expendable items used in occupational therapy.

b. Nonexpendable Items. A nonexpendable item, such as a loom, printing press, or a power tool, is one that is not consumed in use, retains its original identity during use; its cost is such as to make record keeping and control essential to good management.

36. Supply Responsibility

All nonexpendable supplies, including equipment and property, must be accounted for.

a. Accountable Officer. The installation medical supply officer is the accountable officer and is obligated to maintain adequate stock records. Detailed information relating to supply records is contained in AR 735–5 and AR 711–16.

b. Property Officer. A property officer is charged with responsibility for the custody, care, and safekeeping of all nonexpendable supplies under his supervision, regardless of location. Such officers normally maintain informal accountability for nonexpendable items on property books (AR 735–35).

c. Activity Supply. A person within the using agency may be charged, by hand receipt from the property (book) officer, for the items located within his activity.

d. User. Notwithstanding the specific responsibilities mentioned above, it is the serious obligation of all, patients and personnel, to insure the care and safekeeping of equipment and to promote supply economy.

37. Supply Economy

Supply economy is the practice of conservation by every individual in the Armed Forces. It should be developed through training and practice until it becomes habitual. The following points may assist in the promotion of supply economy.

a. Develop a sense of personal property responsibility.
b. Use supplies and equipment properly.
c. Store and safeguard items carefully (fig. 18).
d. Avoid excesses in use of supplies.
e. Conduct equipment inspections frequently.
f. Promote regular and continuing maintenance.

Section VI. MAINTENANCE

38. General

Maintenance is defined by AR 750–1 as action taken to keep materiel in serviceable condition, or restore it to serviceability. Among other functions it includes repair, modification, moderni-

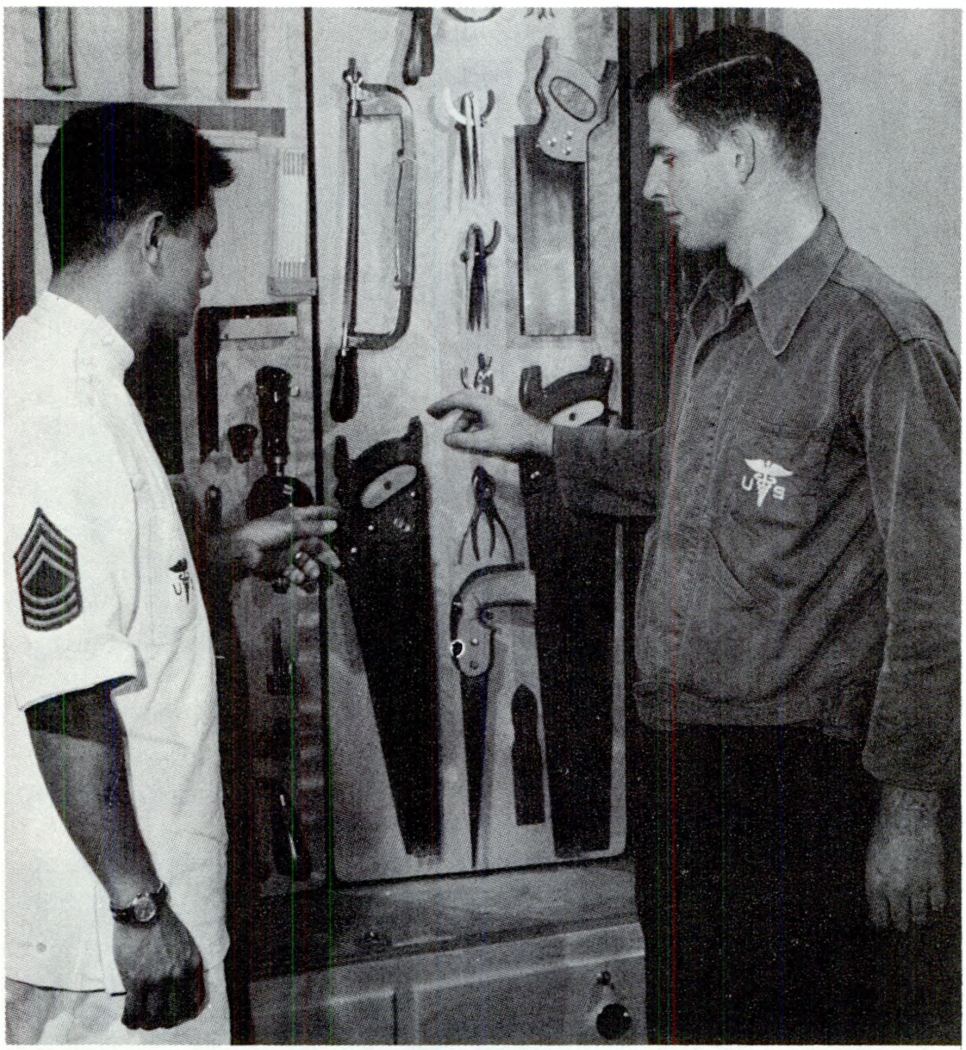


Figure 18. Proper storage provides maximum safety and easy accountability.

zation, overhaul, rebuilding, inspection, condition determination, and classification as to serviceability. Maintenance responsibilities extend from the simple preventive procedures performed by using personnel to the complex repair and rebuilding techniques employed in depot shops.

39. First and Second Echelon Maintenance

The Department of Defense Maintenance Support Plan, under which the Army operates, is divided into three broad categories comprising five echelons, or levels of responsibility. AR 750–5 describes these in detail. Occupational therapy is generally concerned with the Organizational Category, incorporating the lowest two levels of responsibility, namely, first and second echelon maintenance.

a. First echelon maintenance is that performed by the user or operator of equipment. It includes the proper care, use, operation, cleaning, preservation, lubrication, and such adjustment minor repair, and some parts replacement as prescribed by pertinent technical publications.

b. Second echelon maintenance is that performed by specially trained personnel. Appropriate publications authorize at this level, additional tools, parts, and supplies, and skilled personnel to perform maintenance beyond the capabilities and facilities of the first echelon.

40. Responsibility of Occupational Therapy Personnel

a. The principle of echelon maintenance limits the responsibility of occupational therapy personnel to the first echelon maintenance. The maintenance section of the supply and service division performs higher echelon maintenance. To illustrate—first echelon maintenance of an occupational therapy item, the therapeutic bicycle saw, will include such preventive procedures as lubrication, cleaning, inspection for defects, replacement of broken blades, and adjustment of spring tension. Repair of mechanical defects is the responsibility of higher echelons.

b. Effective maintenance depends on whether or not the publications necessary to the use and care of the equipment are in the hands of the personnel for whom they are intended. Instructional material provided by the manufacturers of specific equipment must be readily available and understood. Occupational therapy personnel should be familiar with those publications listed in appendix I, on maintenance and care of equipment.

41. Preventive Maintenance

a. General. One of the most important elements of successful

maintenance is prevention. This involves the systematic care, servicing, and inspection of equipment to maintain it in serviceable condition, and to correct defects immediately.

b. Responsibility. Preventive maintenance is the responsibility of everyone in the hospital. It is important to issue directives, make awards, or display posters, but if interest and inspection are not evident, results are ineffective. Every means possible should be taken to develop "maintenance consciousness" and to implement an inspection policy that calls for continual observation of each piece of equipment. As defects are observed, corrective action should be taken.

Section VII. SAFETY

42. Safety Program

a. The occupational therapy clinic is an area in which there are potential hazards. It contains tools and equipment which must be operated correctly and with precautions.

b. Personnel should develop a keen sense of responsibility toward all facets of the safety program, with particular emphasis on the prevention of accidents within the more hazardous areas.

43. Safety Recommendations

a. It is impractical to establish rules for each condition which might cause an accident. AR 385–10 provides that the safety standards and codes issued by recognized authorities such as the American Standards Association, Atomic Energy Commission, National Bureau of Standards, Interstate Commerce Commission, and National Bureau of Fire Underwriters are the minimum acceptable and will be used in the formulation of safety requirements, except where such standards and codes conflict with the requirements of Department of the Army publications, in which case the provisions of Army publications will apply.

b. Detailed information on Army safety requirements is contained in EM 385–1–1. Other military references and recommendations pertinent to the safe operation of a clinic are as follows:

Safety Recommendations

ENVIRONMENT:	
Floors	Safe, clean condition—daily maintenance.
Approaches	Easily accessible for all patients and conveyances—large enough to accommodate wheel chairs and gurneys—ramps with hand rails—nonskid treads on stairs and ramps.

ENVIRONMENT—Continued

Lighting.....TM 5–680B.

Ventilation.....Maintenance of healthy clinic temperature, 70° F.—prevention of drafts—atmosphere free from fumes—provision for dust collection.

HOUSEKEEPING:

Cleaning.....Specified times, daily and weekly, for cleaning and trash disposal.

Storage.....Materials (other than flammables) stored with preventive measures against sliding.

Away from passageways, with shelves adequate to weight load.

Lumber in self-supporting stacks permitting circulation of air.

Disposal.....Rubbish (nonflammable) in easily available containers with provision for daily outside disposal.

Nails and fasteners removed from lumber.

FIRE PREVENTION:

Alarm systems.

Fire plans.....TM 5–680.

Use of fire extinguishers.

Electrical hazards.....Frequent inspection and repair action on cords, outlets, plugs, and motors.

Assigned responsibility for operation of kilns, strip heaters, hot plates, flat or soldering irons.

Electrical cords located away from water.

Power tools grounded.

Motor switches off before adjustments made.

Machine operation by patients closely supervised.

Guards used on belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, chains, or rotating, reciprocating, or moving parts.

Extension cords used only on temporary basis.

Flammables.....*Use:*

Under supervision of qualified personnel only—smoking prohibited in adjacent area.

Spilled material cleaned up and disposed of immediately.

Refuse in self-closing metal containers.

Gas cylinders adjusted only with proper tools, protected against accidental falling, kept free from grease.

Storage:

Permanent storage at least 10 feet from buildings—well ventilated, and away from direct sun rays.

Not more than 50 gallons stored in any one cabinet, and in tightly covered containers not exceeding 5 gallons.

FIRE PREVENTION—Continued

Flammables—Continued

Disposal:

Separate metal containers for flammables, inside and outside of buildings.

Painting and spraying:

TM 5–461.

PROPER USE OF TOOLS

Handtools:

TM 5–460.
TM 5–461.
TM 9–243.

Power equipment:

TM 5–680.

STANDARD SAFETY COLOR CODE MARKINGS

General:

AR 385–30.

Specific:

GREEN:

Basic color for machinery and equipment.

RED:

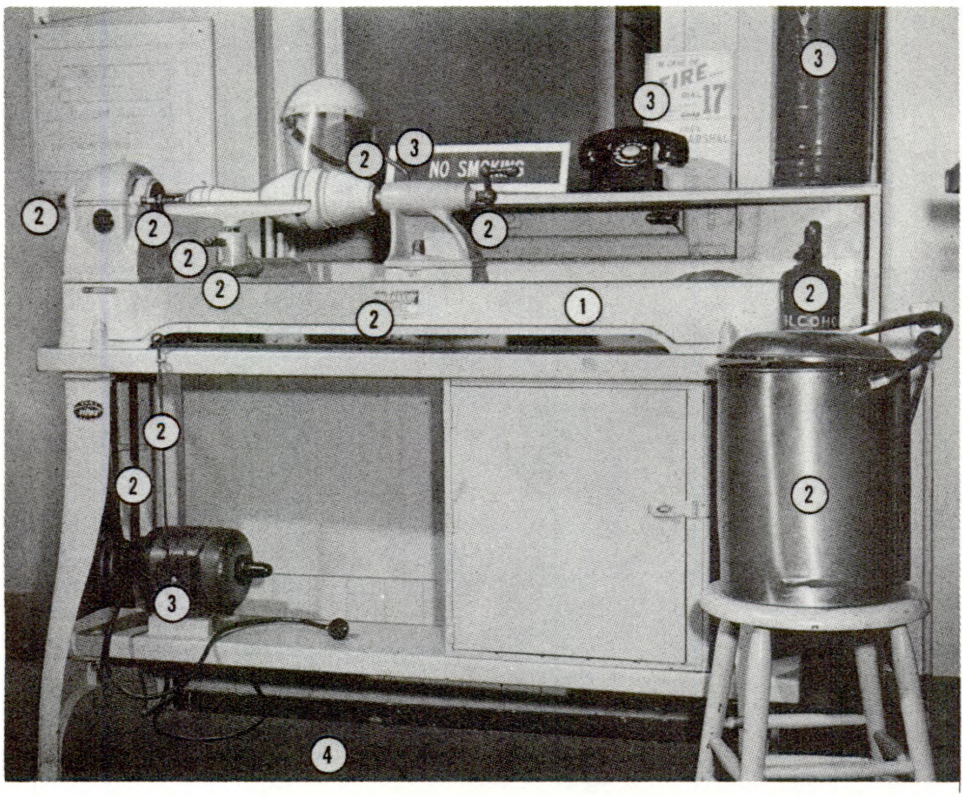
For fire protective apparatus.
Emergency stop buttons.
Bars on electrical equipment.
Fire exit signs.

YELLOW:

Handrails.
Top and bottom treads on stairways.
Caution signs.
Safety cans with black lettering indicating contents.
Waste containers for highly combustible materials.
Hazardous posts or columns.
Points of operation.
Moving parts.
Operating arms—levers on machines.

BLACK, YELLOW AND BLACK, STRIPE, OR CHECKER DESIGN: On floor area around power equipment, extending to a safe distance beyond requirements of operator and material.

Figure 19 illustrates these color code markings.



1 Green
2 Yellow
3 Red
4 Black or yellow and black stripe or yellow and black check

Figure 19. Safety color code markings.

CHAPTER 5

ACTIVITIES

Section I. THE WORK THERAPY PROGRAM

44. General

a. In an increasing number of Army hospitals a work therapy program, which is supervised by an occupaional therapist, is a phase of the treatment for patients.

b. Job descriptions at the Army installation, are surveyed for their adaptability. The job supervisors are oriented to the purposes of the work therapy program.

c. After a patient has received treatment in the occupational therapy section for a period of time, the work therapy program may be prescribed. The patient is interviewed by the occupational therapist and a job assignment is made which meets the requirements prescribed by the medical officer as well as the interest of the patient.

d. The occupational therapist periodically visits the patients and the job supervisors to discuss the compatibility of the assignment. Close liaison is maintained between the medical officer and the occupational therapist concerning the patients assigned to the program.

45. Purpose of the Program

a. It should be emphasized that the purpose of the work therapy program is the therapeutic value to the patient and that the work performed is a byproduct and secondary to the treatment aspect.

b. This program can be utilized in the evaluation of patients for disposition.

c. The work therapy program provides a realistic method of determining the physical tolerance of patients and their capacity to work with, or overcome, a physical disability or mental illness.

Section II. CRAFTS

46. Major Craft Activities

a. Outlines of the five major craft activities, printing, weaving,

leatherwork, woodworking, and metalwork and jewelry, are contained in appendix III.

b. The purpose of these outlines is to provide guidelines for areas of instruction and orientation for technical training of occupational therapy specialists, MOS 923.

47. Practical Experience

It is recommended that practical experience in designing and constructing projects in each of these crafts be incorporated within this orientation. It is also suggested that basic knowledge of sources of supply for these activities be included.

APPENDIX I

REFERENCES

1. Army Publications

AR 10–50	Organization and Functions: Special Command Relationships Within Continental United States.
AR 40–1	Medical Service: Composition, Mission, and Functions of the Army Medical Service.
AR 40–21	Medical Service: Medical Treatment Facilities.
AR 40–22	Organization of Class I United States Army Hospitals.
AR 310–5	Military Publications: Field Printing, Contract Field Printing, and Duplicating.
AR 320–5	Dictionary of United States Army Terms.
AR 320–50	Authorized Abbreviations and Brevity Codes.
AR 385–10	Army Safety Program.
AR 385–30	Safety Color Code Markings and Signs.
AR 611–101	Manual of Commissioned Officer Military Occupational Specialties.
AR 611–201	Manual of Enlisted Military Occupational Specialties.
AR 711–16	Installation Stock Control and Supply Procedures (Army Field Stock Control System).
AR 735–5	Property Accountability: General Principles and Policies.
AR 735–35	Property Accountability: Supply Procedures for TOE Units, Organizations, and non-TOE Activities.
AR 750–1	Concept of Maintenance.

AR 750–5	Maintenance Responsibilities and Shop Operation.
AR 940–10	American National Red Cross: National Red Cross Service Program and Army Utilization.
DA Pam 8–13	Interpersonal Relationships.
DA Pam 108–1	Index of Army Motion Pictures, Film Strips, Slides and Phono-Recordings.
DA Pam 310–series	Indexes of Army Publications.
TB Med 236	The Management of Pulmonary Tuberculosis.
FM 21–5	Military Training.
FM 21–6	Techniques of Military Instruction.
TM 5–460	Carpentry and Building Construction.
TM 5–461	Engineer Handtools.
TM 5–610	Maintenance and Repair: Buildings and Structures; Preventive Maintenance, Safety Requirements, Repairs and Utilities.
TM 5–680	Electrical Facilities: General, Engineering Data and Practices, Tools and Equipment, and Safety Practices; Repairs and Utilities.
TM 5–680B	Repairs and Utilities: Electrical Facilities; Interior Electric Systems.
TM 8–230	Medical Corpsman and Medical Specialist.
TM 8–231	Orthopedic Technicians.
TM 8–243	Neuropsychiatric Technician.
TM 8–244	Military Psychiatry.
TM 8–246	Army Social Work Handbook.
TM 8–273	Professional Manual for Nursing Service.
TM 8–292	Physical Reconditioning.
TM 8–294	Advanced Physical Reconditioning.
TM 8–295	Physical Therapy Specialists.
TM 8–640	Joint Motion Measurement.
TM 9–243	Use and Care of Handtools and Measuring Tools.

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De Jong, Russell N. *The Neurologic Examination.* 2d ed. New York: Paul B. Hoeber, Inc., (Medical Book Department), Harper & Bros., 1958.

EM 385–1–1, *Safety—General Safety Regulations,* March 13, 1958. Available from Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

Fidler, Gail S., and Fidler, Jay W., Jr. *Introduction to Psychiatric Occupational Therapy.* New York: The MacMillian Co., 1954.

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Orthopedic Appliances Atlas—by the American Academy of Orthopedic Surgeons, Inc. Ann Arbor, Michigan: Edwards Bros., Inc., 1952.

Proceedings of the Occupational Therapy Institute: A Reassessment of Professional Education and Practice of Occupational Therapy as Related to Rehabilitation. New York: American Occupational Therapy Association, June 20–25, 1955.

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APPENDIX II

RECORDS AND REPORTS

1. *a.* Records and reports of patient visits in occupational therapy sections are management tools. Such reports provide one of the factors in the measurement of the services provided to patients and assist in establishing resource requirements including the requirements for personnel, supplies, equipment and the physical plant. Workloads of Army occupational therapy sections may be compared through the use of such reports. Uniformity in the method of preparing records and reports must be maintained if reports are to serve these functions. Personnel transferring from station to station should find a basic similarity in the reporting of patient visits.

b. The *visit* of a patient to the occupational therapy section is the established *work unit* for this section. The report must reflect the hospital status of the patient; that is, inpatient, outpatient, or quarters patient. Although the treatment requirements for each patient may differ widely, it is considered that for recording purposes, the treatment requirements of all visits, over a period of time, average to make the visit a reasonable unit of work measurement.

2. In order to maintain uniformity of records, a prescribed method for recording patient visits is established in AR 40–419. In this Army regulation, occupational therapy sections are described as operating in some instances, in single specialized clinics, or to meet the local requirements, subsections or subclinics may be in operation. Examples of such subsections or subclinics include those in operation for psychiatric patients, for patients with pulmonary diseases, physical reconditioning activities and Red Cross arts and skills activities under the supervision of the occupational therapy section. The number of patients receiving occupational therapy in one or more of these specialized clinics or subclinics are reported in terms of patient visits each day in each of the clinics in operation. If operating as a single clinic, each patient seen each day will be tallied as one visit and reported as one adjunct service. If more than one clinic is in operation, one visit will be reported for each visit to each clinic each day. However, a patient seen two or more times in one day by one clinic

will be counted only once by that clinic. Daily records of patient visits to the clinic and to each subclinic should be maintained separately and combined in the end of the month. From this compilation, specific information may be obtained for the hospital headquarters.

APPENDIX III

RELATED DISCIPLINES AND SCIENCES

Knowledge of the human body is the prerequisite in occupational therapy. Basic concepts of anatomy, physiology, kinesiology, neurology, and psychology are contained in government publications referred to below.

1. Anatomy—Structure of the human body and the relation of its parts is covered in TM 8–230 and TM 8–231. In addition, TM 8–295 discusses the principal bones of the body.

2. Physiology—Normal functions and activities of the structure or mechanisms of the body are discussed in TM 8–230 and TM 8–231.

3. Kinesiology—Muscular movement is discussed generally in TM 8–230 and TM 8–231. In addition, TM 8–295 describes joints, movement, and the skeletal muscles; TM 8–640 covers joint motion measurement; and TM 8–292 contains information on muscles.

4. Neurology—Regulation and coordination of activity by the nervous system is described in TM 8–230 and TM 8–231.

5. Psychology—Growth and development of personality is discussed in chapter 5, TM 8–246.

APPENDIX IV

AREAS OF INSTRUCTION FOR MILITARY OCCUPATIONAL SPECIALTY (MOS 923)

1. Printing

a. Orientation to Printing.

(1) Terminology of parts of floor and handpresses.

(2) Uses and care of equipment and supplies: type cabinet, composing table, lead cutter, galley, chase, gauge pins, quoins and key, proof planer/mallet, brayer, and tweezers.

(3) Foundry type.

(*a*) Heighth of type.

(*b*) Type metal.

(*c*) Parts of type.

(*d*) Fonts.

(*e*) Classification of type faces.

1. Roman.

2. Italic.

3. Text.

4. "Gothic" or block-letter.

5. Script.

(4) Spacing material.

(*a*) Leads and slugs.

(*b*) Spaces and quads.

(*c*) Furniture and reglet.

b. Printer's System of Measurement.

(1) Point system.

(2) Pica.

(3) Line measure.

(4) Type measure.

(5) Type sizes.

(6) Measuring type matter.

c. The Printing Processes.

(1) Setting of type.

(*a*) Use of composing stick.

(*b*) Placement of type.

(*c*) Justification and spacing.

(2) Handling of type forms.
(a) Transferring type to galley.
(b) Tying up form.
(c) Emptying galley.

(3) Proofing and correcting forms.
(a) Stone proof.
(b) Clean type.
(c) Revise proof.
(d) Use of tweezers.

(4) Locking up forms.
(a) Use of imposing stone.
(b) Position of form in the chase.
(c) Placement of furniture.
(d) Use of quoins.

(5) Make-ready and feeding.
(a) Inking the press.
(b) Putting in the form.
(c) Setting the guide and adjusting grippers.
(d) Regulating the impression.
(e) Feeding the press.

(6) Distributing the type.

d. Care of Press.
(1) Cleaning.
(2) Oiling.
(3) Care of rollers, winter-summer.

e. Supplies.
(1) Method of ordering printing supplies.
(2) Knowledge of controls of printing equipment.
(3) Knowledge of printing authorized in occupational therapy sections.
(4) Inventory of printing equipment and supplies.

f. Safety Measures for Printing.

g. Therapeutic Aspects of Printing.
(1) Orthopedic and neurological patients.
(2) Medical and surgical patients.
(3) Psychiatric patients.

2. Weaving

a. Orientation to Weaving.
(1) Terminology of parts of floor and hand looms.
(2) Uses and care of equipment: warping reel, warping board, skein winder, spool rack, tension box, and shuttles.

b. Planning a Weaving Project.

(1) Kinds and amounts of materials on hand; use of textures and colors.
(2) Method of reading a simple pattern draft such as twill and tabby.

c. Warping Procedures.
(1) Warp planning, including number of threads and length of warp, pattern, design, and use of color and texture.
(2) Warping (knowledge of at least three methods).
(*a*) Warping board.
(*b*) Warping reel.
(*c*) Sectional-beam warping.
(*d*) Tie-on or dummy warp.
(3) Tying the lease.
(4) Chaining the warp.

d. Dressing the Loom.
(1) Warping (knowledge of three methods).
(*a*) Sectional beam warping.
(*b*) Threading from the front of the loom.
(*c*) Threading from the back of the loom.
(2) Threading and sleying, including method of checking for errors.
(3) Tying warp and establishing correct tension.

e. Loom Alignment.
(1) Testing and adjusting harness and lams, if required.
(2) Readjusting tension.

f. Weaving Process.
(1) Filling the spaces between warp threads.
(2) Preparing the heading.
(3) Throwing of shuttle and proper beating for various kinds of materials.
(4) Establishing good selvedges.
(5) Starting and ending different materials.

g. Finishing.
(1) Removing material from loom.
(2) Fringing or hemming.

h. Methods of Correcting.
(1) Crossed heddles.
(2) Crossed threads in shed.
(3) Errors in threading.
(4) Faulty tension.
(5) Broken warp threads.

i. Supplies.
(1) Methods and sources for ordering supplies.
(2) Storage and inventory of weaving supplies.

j. Therapeutic Aspects of Weaving.

(1) Orthopedic and neurological patients.
(2) Medical and surgical patients.
(3) Psychiatric patients.

3. Leatherwork

a. Orientation to Leatherwork.

(1) Classification of leathers.
(*a*) Steerhide.
(*b*) Cowhide.
(*c*) Calfskin.
(*d*) Sheepskin.
(*e*) Horsehide, deerhide, and elkskin.
(*f*) Skiver.
(2) Selection of appropriate leather.
(*a*) Small projects.
1. Key cases.
2. Coin purses.
3. Wallets.
(*b*) Large projects.
1. Purses.
2. Holsters.
3. Photograph albums.
(*c*) Other.
1. Moccasins.
2. Belts.

b. Uses and Care of Leather Tools.

(1) Types of modelers.
(2) Carving and stamping tools.
(3) Punches.
(4) Knives.
(5) Creasers.
(6) Bevelers.
(7) Space markers.
(8) Mallets.
(9) Dies.
(10) Snap fasteners.
(11) Lacing needles and tips.

c. Leather Processes.

(1) Patterns for cutting.
(2) Cutting and skiving.
(3) Decoration of tooling leathers.
(*a*) Tool requirements.
(*b*) Preparation of leather.

(*c*) Selection of design and transfer to leather.
(*d*) Modeling or tooling of design.
1. Outline.
2. Relief modeling.
3. Stamped background.
(4) Decoration of cowhide.
(*a*) Preparation of leather.
(*b*) Tool requirements.
(*c*) Procedures for carving leather.
1. Transfer of design.
2. Incising or carving.
3. Stamping background.
4. Ornamentation.
(5) Assembly procedure.
(*a*) Gluing of lining.
(*b*) Marking and punching.
(*c*) Assembly of gussets.
(*d*) Attachments, fasteners, and strap assembly.
(6) Lacing, splicing, and ending of lacing.
(*a*) Single buttonhole.
(*b*) Double buttonhole.
(*c*) Saddle stitch.
(7) Finishing.
(*a*) Cleaning.
(*b*) Polishing.

d. Safety Measures for Leatherwork.

e. Therapeutic Aspects of Leatherwork.
(1) Orthopedic and neurological patients.
(2) Medical and surgical patients.
(3) Psychiatric patients.

4. Woodworking

a. Orientation.
(1) Type of wood.
(*a*) Hardwoods.
(*b*) Softwoods.
(2) Qualities of wood.
(3) Grades of wood.
(4) Measurement of wood.
(5) Purchase of lumber.
(6) Storage of lumber.

b. Care and Usage of Handtools.
(1) Storage.
(2) Appropriate use of each handtool.

(3) Basic principles of caring for handtools.
(4) Basic principles of sharpening handtools.

c. Care and usage of Power Tools.
(1) Orientation to proper usage, precautions, care, and maintenance of circular saw, band saw, power and portable sanders, drill press, jointer, lathe, table jig-saw, and other electrical handtools.
(2) Placement of and safety measures for power tools.

d. Construction.
(1) Wood design and layout.
(2) Types of joints.
(3) Fastening methods.
(4) Procedures and planning.

e. Hardware.
(1) Type and size.
(2) Application.

f. Abrasives and Preparation for Finishing.

g. Finishing Methods and Procedures.

h. Planning Project.
(1) Basic blueprint reading.
(2) Making hand sketches.

i. Safety Precaution in Woodworking Area.

j. Therapeutic Aspects of Woodworking.
(1) Orthopedic and neurological patients.
(2) Medical and surgical patients.
(3) Psychiatric patients.

5. Metalwork and Jewelry

a. Orientation to Metalwork and Jewelry. Identification of metals:

(1) Types.
(*a*) Copper.
(*b*) Brass.
(*c*) Aluminum.
(*d*) Silver and metal foils.
(2) Gauge.
(*a*) Sheet metal.
(*b*) Wire.

b. Uses and Care of Metalworking Tools.
(1) Jewelers' saws and blades.
(2) Ball peen, forming, chasing, raising, and planishing hammers.
(3) Wooden and rawhide mallets.

(4) Metal stakes.
(5) Dapping dies.
(6) Punches.
(7) Soldering equipment.
(8) Buffing and polishing machine.
(9) Needle and metal files.
(10) Metal gauge.
(11) Pliers.
(12) Drills.
(13) Metal shears.
(14) Torches, air-gas, and Bunsen burner.

c. Design and Basic Shapes for Metal and Jewelry.

d. Projects in Metalwork and Jewelry.

e. Processes.

(1) Planning design.
(2) Cutting, sawing, bending, and shaping.
(3) Annealing and cleaning.
(4) Forming and shaping.
(5) Soldering.
(6) Oxidizing.
(7) Uses of abrasives and polishing.
(8) Applying findings.
(9) Metal foil tooling.

f. Safety Measures in Metalwork and Jewelry.

g. Therapeutic Aspects of Metalwork and Jewelry.

(1) Orthopedic and neurological patients.
(2) Medical and surgical patients.
(3) Psychiatric patients.

BY ORDER OF THE SECRETARY OF THE ARMY:

G. H. DECKER,
General, United States Army,
Chief of Staff.

Official:

J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

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OS Base Comd (1)
LOGCOMD (1)
MDW (3)
Armies (2)
Corps (1)
Div (3)
Bde (1)
Rgt/Gp/bg (1) except
Med Gp (3)
Bn (2) except Med Bn (5)
Co/Btry (1) except
Med Co (2)
Svc Colleges (2)
Br Svc Sch (2) except
MFSS (2)
WRAMC (5)
MTC (5)
USAH (2)
US Army Hosp (2)
Disp (1)
Units org under fol TOE:
8–500 (Tms AA–RA) (3)
8–510 (3)

NG: State AG (3); units—same as active Army except allowance is one copy to each unit.

USAR: Same as active Army.

For explanation of abbreviations used see AR 320–50.

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